Animals in ritual and economy in a Roman frontier community

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Animals in ritual and economy in a Roman frontier community. Excavations in Tiel-Passewaaij

Introduction

The agrarian economy of local communities in the Roman period is characterised by mixed farming. The production of crops, especially cereals, is combined with raising livestock. The remains of these animals, in the form of teeth and bones, are found in archaeological excavations. Almost 30,000 animal bone fragments were recovered during excavations of two settlements and a cemetery in Tiel-Passewaaij. Around a third of these fragments could be identified to species. The majority is from domestic animals, such as cattle, sheep, horse, pig and dog. Most of the animal bones consist of slaughter and consumption waste, but burials of animals and parts of animals are found as well. The preservation of the animal bones from Tiel-Passewaaij is very good, as a result of the clay soils and high water table. Preservation is best in wells and deep pits, where the bones were buried beneath the water table.

Analysing animal bones from archaeological excavations can provide information on food patterns, the composition of livestock herds on farms, and the local landscape. It can also provide clues on the possibilities for surplus production for the urban and military market, and changes in animal husbandry and the consumption of food during the Roman period.

The animal bones from Tiel-Passewaaij offer the opportunity to analyse animal bones from both a cemetery and the adjacent settlements. This is a unique situation for the Netherlands. As a result, we can now compare the role of animals in different contexts for the first time: daily life on the farm, with the necessity to produce food, funerary ritual, and the use of animals within rituals that took place inside the settlement. The existing publications on animal bone assemblages from Roman rural settlements in the Dutch River Area mostly discuss small data sets, assemblages from settlements with only one or two occupation phases, or assemblages that originate from a small section of a settlement. In Tiel-Passewaaij, one settlement was almost fully uncovered, while for the second one, a large part was excavated. All phases of the Roman period are represented in Tiel-Passewaaij, and the large animal bone assemblage was collected from all parts of the settlement. This means that the data are representative, and that any changes over time can be observed.

Not only do the excavations in Tiel-Passewaaij add to our knowledge of animal husbandry in the Roman period, but the data from two adjacent settlements offer the opportunity to establish local differences. Although some general patterns seem to occur throughout the Dutch River Area, this does not mean that all settlements managed their livestock in the same ways. In some cases, it is even possible to observe differences in farming between individual households.

This study focused on three different aspects: the production of surplus animal products for a market, the use of animals in rituals that took place within the settlement, and the use of animals in funerary ritual.

The production of surplus animal products for a market

The main part of daily food in the Netherlands in the Roman period consisted of cereals; meat was probably not consumed every day. Nevertheless, animal husbandry was very important to local communities. Manure was essential to maintain fertility of arable fields. Grazing livestock on stubble fields after the harvest not only ensured that manure would reach the fields, but the animals would feed on arable waste products at the same time. Furthermore, cattle provided the labour that was needed to plough the fields. Meat may not have been daily food, but it was still an important source of protein and a welcome addition to the diet. Other animal products are milk, wool, skins, bone and horn. These products were not just produced to satisfy local needs, but also as a surplus for the urban and military market.

When trying to identify surplus production of animal products, it is necessary to know how surplus production can be recognised archaeologically. A methodological problem is caused by the most likely form of transport for meat: as living animals. This way, the direct evidence for surplus production is removed from the production site. Literary sources on the production and consumption of animal products are rare, especially for the Netherlands. Iconography and epigraphy sometimes provide information on the production of and trade in animal products. Identifying surplus production based on the quantification of

animal bone data is nearly impossible. One approach is to study changes in withers height of animals, assuming that market demands influenced animal body size.[1] The study of skeletal element representation will only be useful if animals were sold as dressed carcasses. This paper will focus on major changes in animal husbandry: in species composition and mortality profiles. These changes will be interpreted as a response to the demand from a market, in this case the Roman army.

The evidence from Tiel-Passewaaij shows both changes in species composition and mortality profiles. It is important to point out that changes in species composition do not represent changes in absolute numbers, but changes in the proportions of animals that contributed to a particular animal bone assemblage. So what we are seeing are changes in the relative importance of animals. The main changes in species composition during the Roman period are a decrease in sheep and an increase in horse, taking place mainly during the second century AD but starting in the late first century. Changes in mortality profiles also occurred. Since slaughter ages are determined by the products animals were exploited for, it follows that significant changes reflect a change in animal husbandry strategies, i.e. an emphasis on a different product.

In many respects, the Early Roman settlements in the Dutch River Area were not very different from those in the Late Iron Age. The Late Iron Age communities in this area, including that of Tiel-Passewaaij, were mostly subsistence economies. Animal husbandry was mainly geared towards cattle and sheep. Pig and horse are usually found in smaller proportions. Pig provided additional meat, and horse was used for transport and sometimes also for food. Dairy products seem to have made an important contribution to daily food, something that would change during the Roman period. Some goods were produced as a surplus and exchanged in networks between different settlements and tribes, sometimes covering large distances. The main difference with the Roman period is that almost everyone produced their own food, and that goods were not produced for a market.

In the earliest part of the Roman period, the first half of the first century AD, no changes seemed to have taken part compared to the Late Iron Age. This would suggest that no surplus animals were produced. However, it is likely that at least some of the animals needed for food for the Roman army were bred in local settlements. Studying mortality profiles from complimentary sites – production and consumption sites – can provide insights into how surplus animals were produced. Unfortunately, age data are scarce for military sites, especially for the Early Roman period. However, since beef remains the dominant type of meat, we would not expect major changes in production strategies.

For a slightly later period (last quarter of first century and second century AD), we do have age data for both urban and military sites in Nijmegen.[2] These data from consumption sites can be compared with those from Tiel-Passewaaij, a production site. The data are all based on different ageing methods, so to overcome this problem very broad age categories were used. Fig. 2.17 demonstrates very clearly that the mortality profiles are very similar for the three types of site. If rural settlements were producing beef cattle specifically for the Roman market, then we would expect them to sell young animals, which would be the most efficient strategy of production. Instead, the animals whose remains are found in military sites reflect the population structure in the rural settlements. It looks as if there was no specialised production; surplus animals were taken from the existing herds, which were exploited for secondary products such as traction and manure in the first place, and meat in the second place. Although based on just one rural settlement, data from other settlements confirm this conclusion. The absence of a specialised beef production system in the Dutch River Area is confirmed by Filean's research.[3]

The non-specialised system of beef production may seem surprising considering the size of the market for beef. However, a study of medieval York showed a similar non-specialised production system for meat.[4] Most of the cattle and sheep remains found in York were from adult animals, implying that the rural settlements where the animals were raised focused on secondary products such as manure, traction and wool. Only after the animals had been useful to the settlement for a number of years were they sent off to market. York was one of the major cities in York, and yet feeding its inhabitants did not require specialised meat production. Similarly, supplying the large number of people in Roman army camps and towns in the Dutch River Area with meat required no specialised beef production system.

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[1] Robeerst 2004.
[2] Filean 2006; Lauwerier 1988.
[3] Filean 2006.
[4] O'Connor 2000, 163.

In the first century AD, in phases 2 and 3, the proportion of sheep bones in Tiel-Passewaaij was at its peak. The mortality profiles for phases 2 and 3 show a change in exploitation of sheep. While the slaughter peak between 6 and 12 months of phase 2 reflects an emphasis on milk and meat, the older slaughter ages found in phase 3 reflect an emphasis on wool and meat. The increase in the proportion of sheep bones and the change in age distribution suggest that the production of wool gained in importance in the second half of the first century AD. Assuming that in the previous phase enough wool was already produced to satisfy local demands, this increased emphasis on wool suggests that surplus wool was produced specifically for a market. A similar pattern is found in other rural settlements in the Dutch River Area, where high percentages of sheep are common in the first century AD.

In the second half of the first century AD, there was clearly a demand for wool in the region. Even before the arrival of the Roman army in the Dutch River Area, sheep were an important part of the local economy. Shifting the focus of production strategies could have been accomplished quickly and easily. Tiel-Passewaaij already had a sizable flock of sheep and could answer the demand for wool by changing the way they managed the flock. Since the proportions of sheep declined after around 100 AD, we must assume that the demand for wool had declined by this time. If wool was mainly produced for the army, a decline in wool can possibly be associated with the establishment of new supply lines, or a decline in the demand for wool. It could even be connected with the leaving of the 10th legion from Nijmegen in 102/104 AD.

At the beginning of the second century, the proportion of horse bones increased rapidly in Tiel-Passewaaij. This is a continuation of a trend that already started in the second half of the first century. High proportions of horse fragments are found in several other settlements in the area in the Middle Roman period. It has long been assumed that these high proportions reflect a specialisation in horse breeding, connected with the presence of the army. In some settlements, a specialisation in horse breeding is already found in the early Roman period. The Roman army had a large need for horses. Horses were not just used by the cavalry, but also by officers of other army units and for transport of people and goods. Hyland stated that horses only lasted in active service for about three years.[5] With an estimate of the total number of horses serving in the army in the province of Germania of 3700–5300, this means that over a 1000 horses were needed annually to replace retiring ones.[6] There is no evidence for a central supply of horses.[7] It seems likely that many of the horses needed were acquired locally.

For Tiel-Passewaaij, there was one problem with the horse breeding hypothesis. At a site where horses were bred for and sold at market, juvenile horses should be overrepresented, either as natural deaths or as animals that were culled for not fulfilling the criteria of the Roman army. However, there is no strong representation of young horses in phase 4 to 6, the phases for which the proportion of horse bones is highest. Moreover, this strong representation of non-adults is found in phase 2–3. At first glance, this seems to go against the idea of horse breeding in the second century. However, the increase in percentage of horse bones, which undeniably points to an intensification of horse keeping, cannot be overlooked. Perhaps our expectations should be adjusted, and our material regarded from a different perspective. The animal bone assemblage from Tiel-Passewaaij consists of animal bones found inside the settlement, and this has consequences for its composition. The local landscape should also be taken into account.

In the small-scale horse keeping of the Early Roman community in Tiel-Passewaaij, the few horses owned by the inhabitants would be kept close to or inside the settlement, where they would be available for riding or transport when needed. Horses kept within the settlement, in stables or paddocks, needed food which meant time spent on growing or collecting fodder. The number of horses kept in the settlement would therefore be kept to a minimum. Because the horses lived inside the settlement, any animals that died would have had a good chance of ending up in the animal bone assemblage. With the intensification of horse keeping in phase 4, it was no longer efficient to keep all horses inside the settlement, as this would require too much food. It would make sense to keep only those horses in the settlement that were needed for work or that were undergoing training. The main herd would stay at pasture away from the settlement permanently. Keeping horses at grazing grounds only a few hundred metres away would ensure that any animals dying there would not be found in the animal bone assemblage. If we accept that the most efficient way of keeping larger numbers of horses is to leave them at pasture year round, then instead of finding an overrepresentation of young horses, young horses should be underrepresented. This is

[5] Hyland 1990, 86.
[6] Bechert and Willems 1995; Bogaers and Rüger 1974.
[7] Davies 1969, 434–435.

certainly the case for Tiel-Passewaaij in phases 4 to 6, when compared to the age distribution for phases 2–3 and phase 7. This could be an explanation for the apparent paradox of intensification of horse keeping, but absence of foals.

The question is of course whether the local landscape could support large numbers of horses. I believe the landscape was indeed suitable for extensive horse breeding. The flood basins may not have been suitable for growing arable crops, but they offered rich grazing to livestock. Modern herds of Konik horses live in a similar environment year round, without requiring any extra food. Research shows that reproduction is high and mortality low.[8] The horses bred in Tiel-Passewaaij are not related to modern Koniks, but they share similarities in size and probably hardiness. A modern parallel for extensive horse keeping can be found in the New Forest.

Surplus production for the Roman army was an important part of animal husbandry in Tiel-Passewaaij and was focused on cattle for beef, sheep for wool and horses for transport. Considering the proximity of Tiel-Passewaaij to the Roman frontier and the scarcity of towns, most of the surplus produced must have been destined for the Roman army. Thus, local communities played an important role in feeding the Roman army and supplying products such as wool and horses. While the demand for several different products entered the region along with the Roman army, rural settlements were limited in their response by their existing livestock, their expertise and the local landscape. Relative specialisation in certain products was not stable, but changed during the Roman period in many of the settlements, from a specialised wool production in the first century AD to horse breeding in the second century AD.

The use of animals in rituals that took place within the settlement

During the excavation of the settlement Passewaaijse Hogeweg, numerous cases were found of animal bone deposits that struck the excavators as 'odd' in some way. This 'oddness' was felt intuitively at first, but was actually based on completeness of the bones, concentration of several bones, or association with other, non-bone finds. In short, the animal bones in the deposits deviated from what was considered 'normal' bone refuse. No definitive interpretations were made in the field regarding the ritual or non-ritual nature of these deposits; an open mind was felt to be important for the analysis of the data. However, the possibility was recognised that the deposits could have been created during some kind of ritual. Thanks to the care with which this settlement was excavated, a large set of data on animal bone deposits is available for analysis. Although many archaeologists agree on the special nature of the sort of deposits found at Passewaaijse Hogeweg, opinions differ on whether they should be interpreted as resulting from ritual activities. Other explanations for special animal deposits include purely functional activities and taphonomic processes. This study has attempted to establish whether the special animal deposits from Passewaaijse Hogeweg originated in a ritual context.

During the analysis of the special deposits, it was realised that a set of criteria needed to be formulated to discover whether the deposits were ritual or not. A fault in the argumentation here is that the criteria for identifying the ritual nature of the deposits were only formulated after an initial analysis of the data and comparison with the normal bone refuse. However, because specific criteria have to be formulated for each situation, this could not be avoided. The criteria based on the special animal deposits from Passewaaijse Hogeweg can be used for identifying ritual animal deposits in other settlements in the region dating to the same period. The criteria used in Tiel-Passewaaij for the identification of ritual animal bone deposits are as follows:

- Different fragmentation and preservation compared to normal bone refuse. This is not just a result of the location of the deposits in pits or ditches, but more a result of the immediate burial of fresh bones.
- The presence of articulated elements or complete skeletons. Although articulated bones are occasionally found among normal refuse, there is a difference. Articulated bones among refuse are often not complete, but chopped through. Also, the articulated bones among refuse usually consist of only two bones and not complete limbs.

[8] Cornelissen and Vulink 1996, 62-64; Markerink 2002, 107.

- ∞ The species of animal. Burial of a wild animal that was considered edible can hardly be seen as the dumping of a carcass. It must have been hunted and deposited for a reason. In the case of species considered as pests or inedible, the situation is more complex.
- ∞ The way in which the bones were deposited. In some cases it was clear that bones were not thrown in a feature randomly, but placed in a certain, meaningful way.
- ∞ The association of more than one species. A single skull or a single burial could be interpreted as waste or the dumping of a carcass, but to find a burial and a skull together is hard to explain in a functional manner.
- ∞ The presence of more than one individual. This argument is similar to the previous one.
- ∞ Different species distribution from that at site level.
- ∞ Location within certain features such as house ditches.
- ∞ Association with other finds such as pottery and metal. The finds meant here are typically different from those among normal refuse, for instance large pottery sherds, complete pottery vessels, or complete metal objects.

The first two criteria were also used to identify special animal bone deposits in the field. There is a close similarity between these criteria and those used by others.[9] This is hardly surprising since we are dealing with similar material and similar problems. The presence of human remains is deliberately not mentioned here, because nowhere do we find evidence that human bones played a role in special animal deposits in Passewaaijse Hogeweg. In fact, loose human bones have not been found at all for the Roman period at Passewaaijse Hogeweg. Passewaaijse Hogeweg is not typical in this respect; isolated human bones are found frequently, but in small numbers, in rural settlements in the Netherlands.[10]

The special animal deposits from Passewaaijse Hogeweg can be separated into five different categories:

- ∞ Complete or nearly complete skulls
- ∞ Complete skeletons
- ∞ Articulated limbs
- ∞ Combinations of the categories mentioned above
- ∞ Large concentrations of disarticulated bones

Most of these categories have been recognised by others. The final category, concentrations of disarticulated bones, is the most problematic one, and has only been recognised by a few archaeologists.[11] Refuse usually consists of disarticulated bones, so what makes a bone concentration different from 'normal' refuse? First, the number of bones makes a bone concentration stand out. Bone rubbish is usually found more dispersed. Next, the limited fragmentation and excellent preservation, indicating that the bones were buried in a fresh state, differ from animal bones found as refuse. Finally, the ratio of species found in bone concentrations confirms that they are not simply rubbish.

Many complete or nearly complete skulls were found in the settlement Passewaaijse Hogeweg. Skulls were found in pits, ditches and wells. In total, 30 skull deposits were found. Most skull deposits consist of skulls of horse, cattle and dog, with sheep and pig occurring in small numbers. No skulls from wild animals were found in the skull deposits. Not all the skulls in this category were deposited in a ritual manner. Of the thirty skull deposits, ten interpreted as ritual deposits, another ten are almost certainly rubbish, and the remaining ten are uncertain. After assigning a ritual or non-ritual interpretation to the skull deposits, it turned out that most of the horse skulls are ritual deposits whereas most of the cattle skulls are rubbish. The sheep skulls are also believed to be ritual deposits, whereas the interpretation of most of the dog skulls and the pig skulls is uncertain.

A number of complete animal burials have been found, most of which are dogs (table 3.1). At first, it seemed reasonable to assume that these were carcass dumps of animals that were not eaten. However, two dog burials were found in a combination deposit, which indicates that their burial could be

[9] Grant 1984a, 542; Mulville 2001.
[10] For example in Kesteren-De Woerd (Zeiler 2001, 238) and Wijk bij Duurstede-De Horden (Laarman 1996b, 376). In Oude Tielseweg, some isolated human bones were found in phases 2 and 5.
[11] Hill 1995, 28, 63, 70-71; Maltby 1985, 55-56, 60-61; Meniel 1992, 30, 91-105.

related to ritual practices. Furthermore, another dog was carefully buried on top of pottery sherds, arguing that this was not simply a disposal of a rotting carcass. Two other dogs were buried in the same house ditch. Most of the skeletons were buried in pits, but one dog was found in a well, and a red deer skeleton was buried in a ditch.

Articulated limbs are rare at Passewaaijse Hogeweg, with six certain deposits and one possible deposit. In three cases, a skull was found together with three lower limbs.

Combination deposits are relatively rare: only four were found in Passewaaijse Hogeweg. The exact contents of the deposits vary, but all contain two different species and deposit types. Twice, a complete skeleton is found together with a skull from another species. Wild animals are found in two of the combination deposits. A horse skull was buried in a pit, accompanied by an iron knife. A skeleton of a black crow was found within the same feature, not more than a metre from the horse skull. The skull belonged to an adult horse. The crow was buried with its wings folded close to its body. A number of animal bones were found in the same pit. Just a few metres from a complete dog skeleton, another dog skeleton was found. This dog, another adult male, was lying on its right side in a pit with its front legs folded beneath its body. Behind the dog's back end, large parts of a red deer were found. A skeleton of a dog was found in a ditch together with a horse skull. Special Deposit 36 shows evidence for the deliberate positioning of bones. A skeleton of an adult female sheep was found in a pit. The head of the sheep had been removed and placed behind its body. Just above its back end, a group of neonatal sheep bones was found. Only the leg bones were recovered, but this could be due to preferential preservation. Where the adult sheep's head should have been, the mandibles and one maxilla of a calf were found. Another find from the same pit consisted of an additional set of sheep cervical vertebrae. It is the combination deposits that are the most convincing of ritual deposits. The deliberate burial of parts of two different animals clearly means something.

Concentrations of disarticulated animal bones are problematic, because they seem to be precisely what refuse should be. However, the quantity of bones, the completeness of the bones and the good preservation were all very different from the normal bone refuse in this site. Four bone concentrations were found which seem similar. They contain large amounts of well-preserved bones from horse, cattle or sheep. In all four deposits, remains from two or more animals were found. Four others were different from these as well as from each other and could have resulted from very different practices. These deposits are difficult to interpret and may not be related to ritual practices.

For the special deposits from Passewaaijse Hogeweg, it was only after analysis, comparison of the deposits with each other, and careful consideration of possible criteria that an interpretation was reached. Of the 62 special deposits, 36 are believed to be ritual deposits. Four of these may contain the remains of feasting. The special deposits from Tiel-Passewaaij show a large variation. However, some general conclusions can be made. There seems to be a relationship between some animal species and the type of deposit it was used for. Some preferences can be seen among the special deposits that are interpreted as ritual deposits. Dogs were found mostly as complete skeletons, either by themselves or in combination deposits. Horse occurred in all types of special deposit, but skulls were found more frequently than other body parts or complete skeletons. Two of the combination deposits also contained horse skulls. Three out of five articulated bone deposits contained horse bones. Cattle and sheep were found in all types of deposit in similar numbers. Red deer was only found in two deposits: once as a complete skeleton, and once as a partial skeleton as part of a combination deposit. A black crow skeleton was found once in a combination deposit. Pig is conspicuously absent in ritual deposits. Some repetitive patterns were found among the special deposits from Passewaaijse Hogeweg. These are:

- ∞ Dog skeletons associated with pottery in two cases.
- ∞ Horse associated with metal finds in two cases.
- ∞ A missing leg in three articulated limb deposits.

In phases 2, 5-6 and 7, many of the special deposits were incorporated in or close to house plans or farmyard boundaries, whereas in phases 3 and 4, ritual deposits were located outside farmyards or at some distance from farmhouses.

Animals in funerary ritual

The cremation cemetery in Tiel-Passewaaij originally consisted of about 490 graves (although many graves have been lost) and covered 5 hectares. A total of 343 graves has actually been excavated.[12] This makes it one of the largest Roman cemeteries in the Netherlands. The earliest graves date to around 60 AD, and the latest to around 270 AD.

There are several factors that ensure that this cemetery site has unique research opportunities. First, there is the excellent preservation. Second, there is the large number of graves, combined with the fact that most of the cemetery has been excavated. Excavations at many Roman cemeteries are small-scale and incomplete, which means that the information is fragmentary at best. Next, the strategy with which the cemetery was excavated made maximum use of the available information and research opportunities. From the outset, one of the research aims for the cemetery was to study the whole process of the funerary ritual, and not just the aspect of the cremation graves. In the case of the animal bones, one important factor is that animal bones from all features as well as the original ground surface have been collected and analysed. Almost certainly, animal bones were present in grave ditches in other cemeteries as well, but have either not been collected or not been selected for analysis. Finally, it is not just this cemetery, but also the two adjoining settlements for which we have information. This enables us to make a comparison between the animal bone samples from a cemetery and the settlements that used this cemetery.

The different contexts in the cemetery in which animal bones were found consisted of cremation graves, grave ditches, burial mounds, ceremonial pits, and the original ground surface. These different contexts were created or relevant at different moments in the funerary ritual. Cremation graves have been classified into different types, the exact details of which need not concern us here. However, what we do need to realise is that the amount of animal bones in a grave depends on one basic distinction: whether the cremated remains were selected from the pyre remains or not. In order to make the grave visible, a low burial mound surrounded by a grave ditch was thrown up on top of the grave. The ditches, and thus the mounds, can be either round or rectangular or, in a few cases, of an irregular shape.[13] The diameter of the grave ditches varies from several metres to up to 20 metres. Ceremonial pits are pits that contain large amounts of burnt pottery and burnt animal bones. In contrast to graves, not just a few fragments of each individual pot were found, but complete vessels broken into pieces. The number of plates, pots and glass items was large. The pits contained charcoal but no human cremated remains. Ceremonial pits were located either outside the grave ditches or within a grave ditch but not in a central position. It is not yet clear how these pits should be interpreted. Sedimentation has preserved parts of the original Roman ground surface in the southern half of the cemetery, as well as animal bones deposited there. Apart from the human graves, several animal burials were also found in the cemetery.

Burnt bones from pig, chicken and sheep or goat dominate the animal bones found in graves. Bones from pig and chicken are usually burnt, whereas sheep or goat fragments can be burnt or unburnt. This implies an important difference in treatment of the meat portion: either it was placed on the pyre and burned with the corpse, or it was put in the grave when the cremation was buried. The two actions represent different moments within the funerary ritual. Apparently, pig and chicken were almost exclusively associated with the funeral pyre and the cremation itself. Unburnt fragments of pig and chicken were found in only a few graves. These unburnt fragments, and about half of the sheep bones can be associated with a later event: the burial of the collected remains. There is another difference between pig and chicken on the one hand, and sheep/goat on the other. If we look at the number of bones found in each grave, we see that pig and chicken are usually represented by several fragments, whereas sheep/goat is represented by just one or two fragments. Based on this evidence, we can formulate the following hypothesis: portions of pig and chicken were placed on the pyre with the corpse and burned with it. While the rest of the animal may have been consumed by the survivors, no evidence for this was found in the cemetery. Sheep or goat meat was consumed during the funeral. One or two fragments were symbolically given to the deceased, either during the cremation when they were thrown on the pyre and burned, or during the burial of the cremated remains.

The animal remains we find in ceremonial pits are very specific, and clearly not the refuse of just a meal. The ceremonial pits contained burnt bones of mainly pig and chicken. Almost all pig fragments were from hind legs. A first explanation is that the animal bones are the remains of a ceremonial meal. The bones and the pottery would have been burned after the meal and buried in a pit. The inclusion of hobnails and a

[12] Only one inhumation was recovered; all other graves are cremation graves.
[13] Tops 2001, 11.

coin seems out of place for a meal, but could have been included in the pit for symbolic reasons. However, it is impossible to prove that the remains are from a meal. The meat portions could just as well have been burned completely, as some sort of sacrificial offering to the dead. Burning pottery, glass and meat may have been a way of assuring that their essence reached the deceased. Another possibility is that these pits represent the funerary rites for a member of the community who died far away from home, or whose corpse was unavailable for cremation due to other reasons (for instance drowning).

Among the animal bones found in grave ditches and among surface finds, horse bones dominate. The percentage of horse bones is much higher than that in the settlement phases contemporary with the cemetery. For horse and cattle, the percentages of butchered and gnawed bones are much lower than those for the settlement Passewaaijse Hogeweg. This confirms the idea that the horse and cattle bones in the cemetery are not normal settlement refuse. They are the remains from a specific part of the Batavian funerary ritual. Isolated body parts of horse and cattle were brought to the cemetery. For horse, heads and hind legs were preferred. These body parts were not butchered any further, so it seems that the meat was not consumed. All this does not necessarily mean that horse and cattle were slaughtered specifically for these rituals. It is possible that whenever a large animal was killed, or died from natural causes, part of its body was offered to the ancestors or the gods that controlled death and the afterlife. These body parts may have been buried in shallow pits that were later disturbed. Alternatively, they may have been left on the ground between the burial mounds, or on top of one of the mounds. A practice closely related to this one is the burial of a complete horse and a calf. This is a variation on the rite in which body parts of horse or cattle were left on the burial mound.

These results from the analysis of the animal bones from the cemetery Passewaaijse Hogeweg demonstrate the need for a change in excavation strategy for Roman cemeteries. Instead of focusing on the central graves, it is imperative that all features are fully excavated and sieved and all finds collected. Only then can we begin to understand funerary ritual and find out whether the situation in Tiel-Passewaaij is exceptional or a normal pattern.